

EHS and Risk Management Across the CSU

April 2023

Presented by Scott Bourdon
Fitting the Pieces Together Conference in San Diego

SRM Campus Visits

HOW WORKERS'
in COMP WORKS
CALIFORNIA

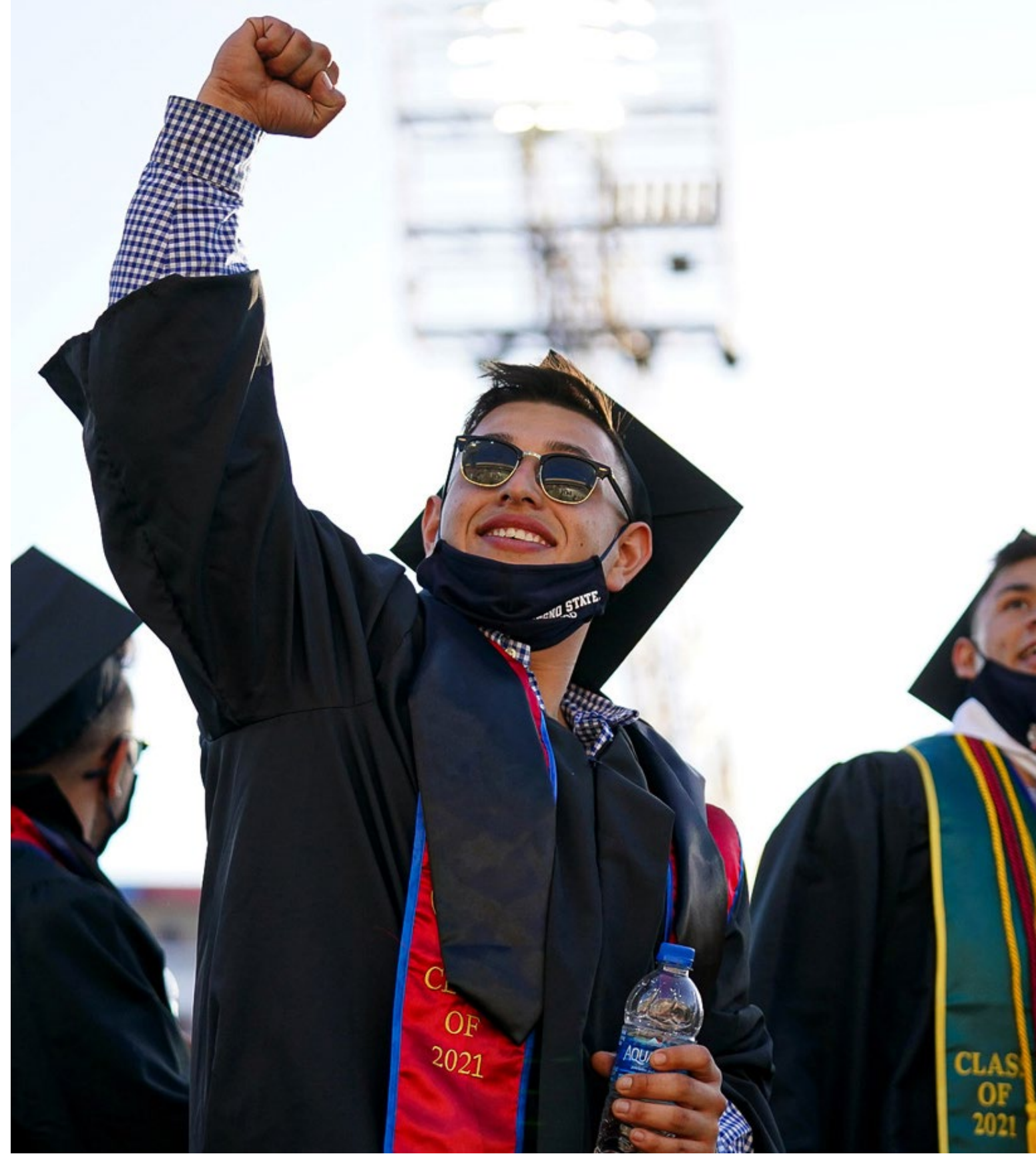


Safety & Health

JOIN US!



Environmental Health & Safety



CSU EHS Staffing Rate and FTE*

2020

5.1

129 EHS Staff

2021

4.9

127 Total Staff

2022

4.9


126 Total Staff

These rates are all higher than national university EHS staffing rates (though comparing the complex regulatory environment and enhanced stakeholder expectations in CA with national universities is not directly comparable).


EHS Job Vacancies

How many vacancies do you have in your regular EHS staffing numbers (the budgeted EHS staff positions noted in your annual report)?

zero vacancies (7 responses)



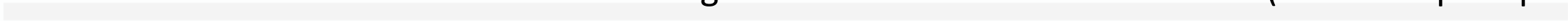
2 vacancies (6 responses)



1 vacancy (5 responses)



3 or more vacancies (0 responses)



Request – Ask campuses to fill vacancies; ensure salaries are adequate; and consider using the new EHS Classification Series (even as a pilot project if it is not finalized).

SRM Efforts in this Area

SRM is interviewing applicants for a Systemwide Analyst; CSURMA will fund the position to support campuses with:

- SRM will hire a Training and Compliance Administrator.
- CSU will establish and EHS-specific job classification.
- An EHS benchmarking and professional development expert provided training for CSU EHS teams.



Influences: Square Footage, Department Safety Coordinators, Agricultural Programs, # of Lab Groups, Theater Programs, Regulatory Complexity

<p>EHS Staffing EHS Budget Embedded EHS Professionals Student Employees EHS Staff Development</p>	<p>Inspections Hazard Assessments Training Program Reviews Hazardous Waste Operations Incident Investigations*</p>	<p>Inspections Completed Hazard Assessments Completed Chemical Inventories Completed Training Compliance Safety Program Reviews Completed Hazardous Waste Quantity Investigation Reports</p>	<p>Injury Rate Reduction Fatality Prevention Environmental Release Reduction Organizational Learning Customer Satisfaction Improved Regulatory Compliance Improved</p>
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Active Users
576

All Users
155,322

Users by Role

● Active Users ● Inactive Users

Users by Solution

● Active Users ● Inactive Users

3,793

Groups

Last Updated: 4/7/2023

Hazard Assessment	796 <small>RPs</small>	1,408 <small>Certified Assessments</small>	46.3 % <small>Fully Acknowledged</small>	2,983 <small>Named Lab Workers</small>	5,398 <small>Acknowledgment Required</small>	63.5 % <small>Acknowledged</small>	28 <small>Assessments In Progress</small>
Biological Hazards	293 <small>RPs w/ Biological Hazards</small>	403 <small>w/ Biological Hazards</small>					
Chemicals	678 <small>RPs w/ Chemical Hazards</small>	1,046 <small>w/ Chemical Hazards</small>	430 <small>RPs w/ Inventories</small>	1,146 <small>Total Inventories</small>	19.0 % <small>Inventories Certified</small>	857 <small>Inventory Owners</small>	430 <small>Owners w/ Assessments</small>
Radiation Hazards	49 <small>RPs w/ Radiological Hazards</small>	58 <small>w/ Radiological Hazards</small>					
Inspect	2,256 <small>Incomplete Inspections</small>	2,212 <small>w/ Overdue Findings</small>	8,262 <small>Unresolved Findings</small>	21.7 % <small>Resolved Findings</small>	<div style="font-size: 0.7em; color: white; border: 1px solid white; padding: 2px;"> <p>Rank ▲</p> <p>Top Findings</p> <p>1 Secondary chemical containers (i.e., "in-use" containers) are labeled with the chemical name and hazardous properties, OR a "user-defined label" that includes an identification of the contents and information about the hazardous properties.</p> </div>	104 <small># of Checklists</small>	
WASTE	1,112 <small># of SAAs</small>	715 <small>In SAA</small>	83 <small>Over SAA Limit</small>	1,298 <small>In WAA</small>	593 <small>Over WAA Limit</small>	434 <small>New Tags (Last 30 days)</small>	235 <small>Shipped/Disposed (Last 30 days)</small>

Program Review Results—Environmental

Plan / Program	Reviewed / Implemented / Submitted	Not Reviewed / Implemented / Submitted	Not Applicable
Stormwater Pollution Prevention	15*		5
Hazardous Waste Minimization	7*	2	11
Hazardous Materials Business	19*	1	
Medical Waste Management	18*	1	1
Spill Prevention Control and Countermeasure	18*		2

Data request submitted to East Bay, Pomona, Fullerton

Selected Systemwide Programs Reviews

Program	2021 % Reviewed	2022 % Reviewed
Arc Flash / Electrical Safety	41%	40%
Lockout / Tagout	50%	65%
Confined Space Entry	53%	40%
Powered Industrial Truck	55%	50%
Asbestos	57%	90%

4 of the 5 can result in immediate risk of serious injury or death. So, program review for these programs needs to be an important area of focus this year.

Employee Training

Training Compliance	Campus Compliance %	Systemwide Average Compliance %
Injury & Illness Prevention Program*	70% (4/3/2023)	TBD
Hazard Communication	82%	TBD
Hazardous Waste	0%	TBD
Employee Lab Safety	95%	TBD

Substantial compliance would be considered 95%.

*The SLD compliance dashboard provided the IIPP data; the other data is from the Annual Reports.

Injury Rates

CSU Campus Injury Rate (IR) ¹ 2022	CSU Campus Lost Time (LT) IR ¹ 2022	2021 State Educational Services IR*	2021 State Educational Services LT IR*	2021 National Higher Ed IR**	2021 National Higher Ed LT IR**
1.38 TBD	0.65 TBD	1.5	0.5	1.4	0.4

* State IR and LT IR are from CA Department of Industrial Relations, [Table 1](#). Incidence rates[1] of nonfatal occupational injuries and illnesses by selected industries and case types, California, 2021...Educational services Code 611

**National IR and LT IR are from BLS [TABLE 1](#). Incidence rates(1)of nonfatal occupational injuries and illnesses by industry and case types, 2021 for Colleges, universities, and professional schools NAICS Code 6113

Regulatory Activity

Please share lessons learned or updates with other campuses and SRM.

- *Cal/OSHA-Now considers the CSU as one employer and repeat violations could result in serious violations at other campuses.*
- AQMD-A tier 5 category could result in stricter regulations.
- RWQCB-Regulates stormwater pollution and sanitary sewer discharge.
- Environmental Health-Regulates pools and retail food facilities.
- CUPA-Regulates hazardous materials

Workers' Comp

- What are two or three things you/campus/system can do better?
- What are two or three things that work well and/or add value?
- What are your interactions between EHS/WC like for investigations, Cal/OSHA reporting for injuries, other issues?
- Anything you would like to discuss?

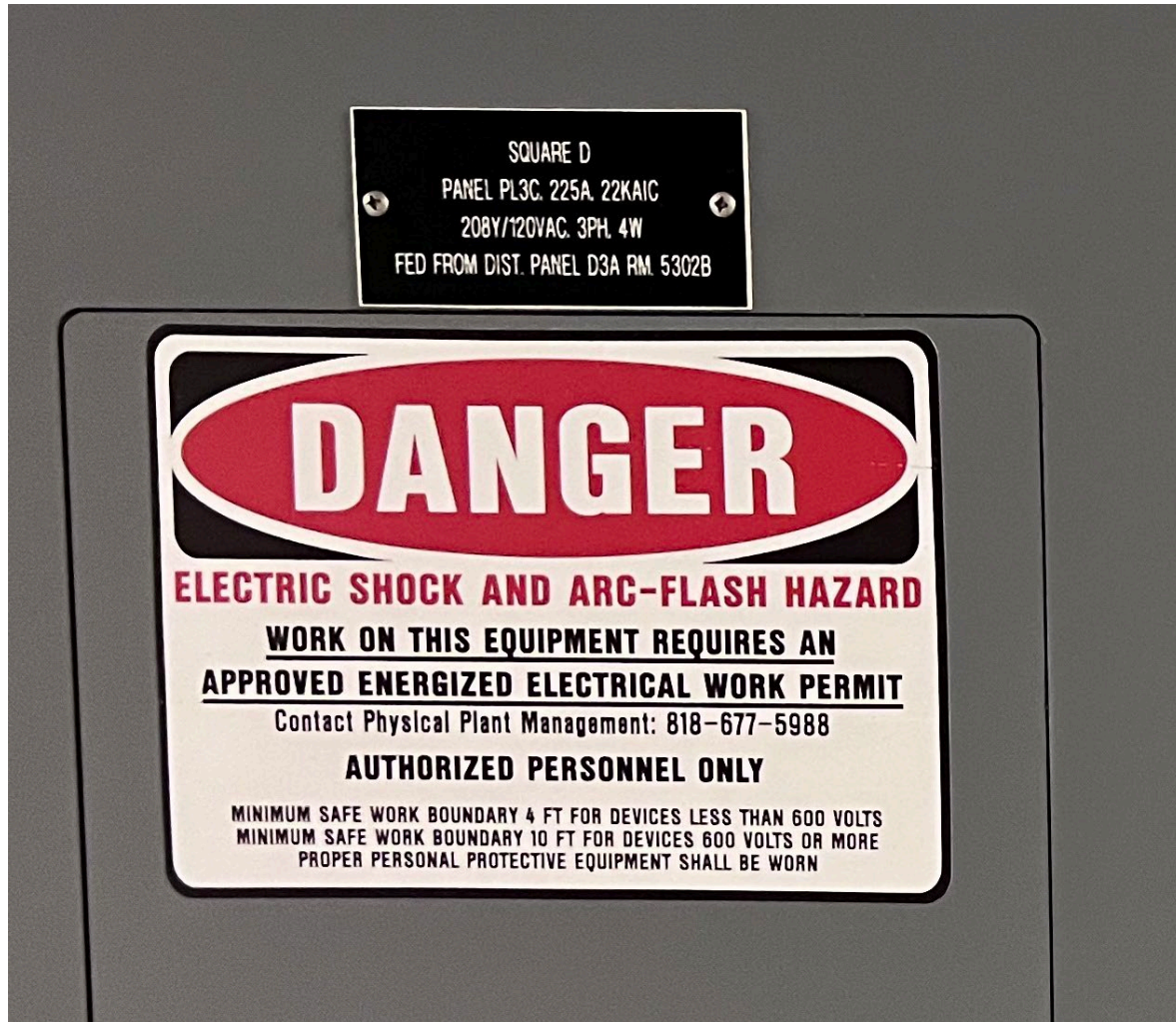
Risk Management

- What are two or three things you/campus/system can do better?
- What are two or three things that work well and/or add value?
- What are your interactions like with EHS, Workers' Compensation, especially for investigations and regulatory reporting?
- Anything you would like to discuss?
- Is there a good way to track under-deductible claims Systemwide?

Facilities



Arc Flash Protection



Fall Protection



Scientific Marine Operations



Marine Facilities





Marine Facilities



Marine Facilities



Marine Facilities



Marine Facilities Shared



Marine Research



Marine Research



Marine Research



Scientific SCUBA Diving

Cal/OSHA exempts research diving from commercial diving regulations with Dive Safety Board oversight and a Dive Safety Manual. Dive Safety Officers need to oversee all dive outings.

- Review Dive Safety plans and conduct Risk Assessments.
- Follow American Academy of Underwater Scientists standards.
- Provide training and confirm divers have completed training.

The CSU plans a scientific SCUBA diving peer review safety audit.

CSU DSOs routinely collaborate with DSOs from UC and numerous national and international institutions.

Scientific SCUBA Diving Programs

- **MLML Consortium:** San Jose, East Bay, San Francisco, Sacramento, Fresno, Stanislaus, and Monterey Bay
- **CSU/OSI Consortium:** Channel Islands, Dominguez Hills, Fullerton, Long Beach, Los Angeles, Northridge, Pomona, and San Bernardino
- San Diego
- San Luis Obispo
- Monterey Bay
- San Francisco
- Humboldt

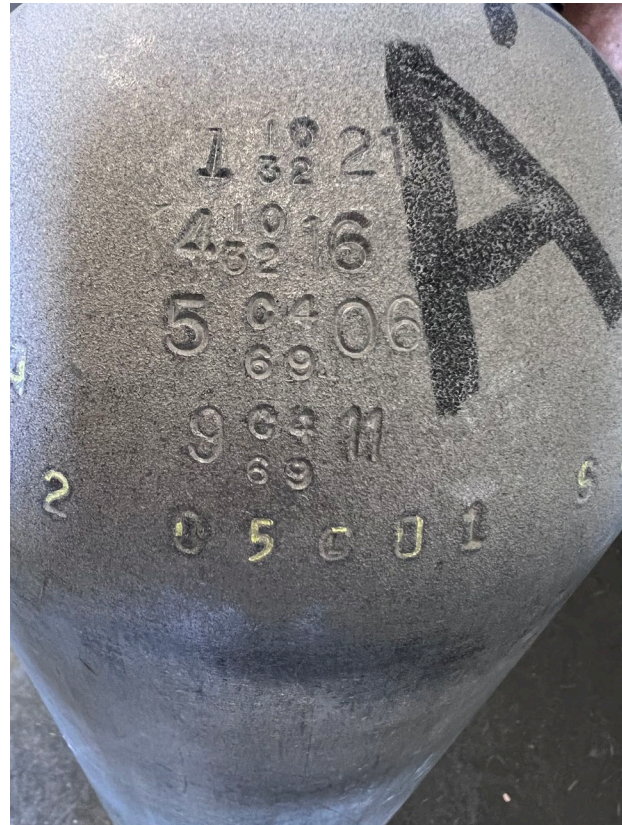
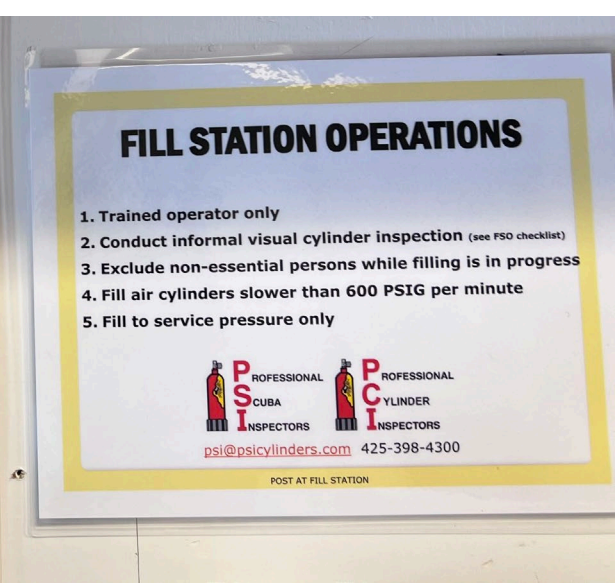
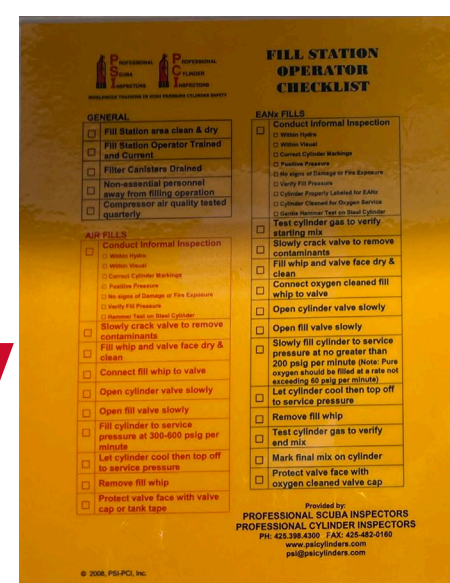
Scientific SCUBA Diving



Scientific SCUBA Diving



SCUBA Equipment Safety



NAUI WORLD WIDE DIVE SAFETY THROUGH EDUCATION

32-DIVE TABLE
USE ONLY WITH 32% OXYGEN ENRICHED AIR
TABLE 1 - END-OF-DIVE LETTER GROUP

PO ₂ msw	START DEPTH fsw	NO-STOP TIME	MINUTES REQUIRED TO COMPRESS	MINUTES REQUIRED TO DECOMPRESS
0.7 12 40	15 30 45 60 75 95 120 145 170 205 250 310			
0.8 15 50	5 15 25 30 40 50 70 80 100 110 130 150 170 200 250 310			
0.9 18 60	10 15 25 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310			
1.0 21 70	10 15 20 25 30 40 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310			
1.1 24 80	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310			
1.2 27 90	5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310			
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1.4 33 110	5 7 10 15 20 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100 103 106 109 112 115 118 121 124 127 130 133 136 139 142 145 148 151 154 157 160 163 166 169 172 175 178 181 184 187 190 193 196 199 202 205 208 211 214 217 220 223 226 229 232 235 238 241 244 247 250 253 256 259 262 265 268 271 274 277 280 283 286 289 292 295 298 301 304 307 310			
1.5 36 120	5 7 10 15 20 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100 103 106 109 112 115 118 121 124 127 130 133 136 139 142 145 148 151 154 157 160 163 166 169 172 175 178 181 184 187 190 193 196 199 202 205 208 211 214 217 220 223 226 229 232 235 238 241 244 247 250 253 256 259 262 265 268 271 274 277 280 283 286 289 292 295 298 301 304 307 310			
1.6 39 130	5 10 13 15 20 23 26 29 32 35 38 41 44 47 50 53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98 101 104 107 110 113 116 119 122 125 128 131 134 137 140 143 146 149 152 155 158 161 164 167 170 173 176 179 182 185 188 191 194 197 200 203 206 209 212 215 218 221 224 227 230 233 236 239 242 245 248 251 254 257 260 263 266 269 272 275 278 281 284 287 290 293 296 299 302 305 308 311			

TABLE 2 - SURFACE INTERVAL TIME TABLE

TABLE 3 - REPETITIVE DIVE TIMETABLE



Safety Documentation

SAN DIEGO STATE UNIVERSITY
Diving/Boating Release and Waiver

- Date(s) of proposed activity _____
- Legal Name _____
- Local Address _____ zip _____
- Email Address _____
- ____ Faculty/Staff ____ Grad ____ Undergrad ____ Non-SDSU
- Emergency Contact Information:

Name _____ Relationship _____

Phones: H _____ Cel _____ W _____

Address _____ zip _____
- Release and Waiver

The undersigned, and, in the event the undersigned is under 18 year s of age, the undersigned's parents and/or guardians, for and in consideration of granting permission by the Trustees of the State University and Colleges System, a California Corporation, for said to participate in the following activity

under the auspices of San Diego State University, herby hold(s) harmless and release(s) and forever discharge(s) the Trustees of the State University and Colleges System, the Diving Control Board, the Diving and Boating Officer, employees in the diving and boating programs, boat operators, diving buddies, and all the Trustees agent's, officers, assistants, and employees either in their individual capacities or by reason of their relationship to the said Trustees of the State University and Colleges System and their successors, from any and all claims and demands whatsoever, which the undersigned and any of them, and their heirs, representatives, executors, and administrators thereof, or any other persons acting on their behalf, or on the behalf of the State University and Colleges System, or any or all of the abovementioned persons or their successors, by reason of any accidents, illness, injury or death, or other consequences arising or resulting directly or indirectly from participation in boating activities under the auspices of the State University and Colleges, and occurring during said participation, or at any time subsequent thereto.

I hereby declare that I am of legal age and am competent to sign this Agreement or, if not, that my parent or legal guardian shall sign on my behalf, and that my parent or legal guardian is in complete understanding and concurrence with this agreement.

Signature _____ Date _____

Signature of Parent or legal guardian if participant is a minor. _____

Signature _____ Date _____

Signature of witness, who is not a minor. _____

Signature _____ Date _____

SAN DIEGO STATE UNIVERSITY

REMINDER: Divers must agree that all diving done under the auspices of the SDSU will be carried out in accordance with the provisions of the current SDSU Diving Safety Manual. They acknowledge that it is their responsibility to read the diving manual and to comply with the regulations therein. Divers understand that violation of any regulation may result in denial of, restriction of, or revocation of their SDSU scientific diver authorization.

Printed Name	Date Out	Tank #s	Date In	Initials
Arzuian	4/17/22	A26, A27	4/17	LA
Baer	4/20/22	R25, 28, A21, 25, 29, 48	4/21	JTB
Baer	4/28/22	R24, 28, A15, 18, 45, 47	4/29	JTB
Van Druggen	5/10/22	A26, A27, A28, A29, A24, A25	5/10/22	WJD
Auxiliary (class)	5/16/22	A30, 31	5/16/22	NA
Fatin Sheets	5/16/22	R 29, 40 32, 33 R 33, 30	5/16/22	NA
Joseph Burch	5/16/22	A32, A33	5/16/22	NA
Makayla Bonney	5/16/22	A35, A36	5/16/22	NA
Karlid Lillie	5/16/22	R24, R24, R34	5/16/22	NA
Ashton Ballard	5/16/22	A27, A28	5/16/22	NA
Angela (class)	5/18/22	A 18/19, R33/24 R34/32	5/18/22	NA
		A31, A32, A33, A34, A25, A26, A27, A28, A29, A24, A25, R38	5/18/22	APD
		A20, A21, A29, A24, R28	5-19-22	JNB
		A21, A24, A25	↓	↓
Aramesat	5/19/22	R36, R40, R26, R27	5/20/22	CCB
Joseph N. Burch	5/20/22	A40, A41, A42, A43	↓	↓
Ashton Ballard	5/21/22	R24, R25, A42, A43, A51, A52	↓	↓
		R27,	↓	↓
Kristina Sheets (class)	5/20/22	A29, A28 A27, A28	5/20	KS
		A25 A20	↓	↓

PASS

TRACE Analytics LLC

Certificate of Analysis

CSU/OSI

is in compliance with the air/gas quality portion of the specification:
CGA G-7.1-2018 Grade E (O) & L(O)
as analyzed and reported on this certificate for the sample described under section "Sample & Report Information"

Analytical Test Methods:
 Gas & Vapor: CEA-01 Gas Chromatography/Mass Spectrometry
 O2 & Particulate: CEA-03 Analytical Gravimetry
 Partic Size: CEA-04 Optical Microscopy
 Pressure Dew Point: CEA-07 Gas Detector Tube

Sample & Report Information:
 Sample ID: 21-32533
 Customer ID: 61875
 Date Reported: 10/22/2021
 Frequency: Semi-Annual

From:	Trace Analytics, LLC	15768 Hamilton Pool Road	Austin, Texas 78738
To:	Mr. Darrell Montague	Ocean Studies Institute/ Southern California	821 S SEASIDE AVE S41 PEDRO, CA 90731
Analyses	Source Results (1)	Ambient Results	Specification Allowable Limits
Oxygen, Volume %	20.8	N/A	20-22
Nitrogen, Volume %	78.3	N/A	N/A
Argon, Volume %	0.8	N/A	N/A
Nitrogen Plus Argon, Volume %	79.2	N/A	N/A
Carbon Dioxide (CO2), ppm	<0.5	N/A	10
Water Content (H2O), ppm	619	N/A	1000
Water Content (H2O), ppm (Dewpoint, °F (D))	72.4 (41)	N/A	24 - 45 (40)
THC (excluding CH4), ppm	2.4	N/A	25
Methane (CH4), ppm	2.4	N/A	N/A
THC (excluding CH4), ppm	<0.7	N/A	N/A
Oil (condensed) & Particulate, mg/m3	<0.05	N/A	5
Color (provided by customer)	None/Slight	N/A	None/Slight
Other	N/A	N/A	N/A
Other	N/A	N/A	N/A
Other	N/A	N/A	N/A

Report 21-32533, Sampled on 10/14/2021

SAN DIEGO STATE UNIVERSITY
SDSU Boating Program
Daily Float Plan

All vessels operating under the auspices of the SDSU must, at the minimum, be in compliance with local, state and USCG regulations. The operator assumes operational and financial responsibility while using the vessel listed below.

Date: _____
 Departure time: _____
 Estimated Return Time: _____

Name & description of vessel: _____
 Number of people on boat: _____
 Captain of Vessel: _____ Cell#: _____

Names of Crew:

Specific Area of Operation: _____
 Type of Activity: _____
 Point of Departure: _____
 Description of Tow Vehicle (if applicable): _____
 Shore Contact: _____ Contact Number: _____
 Current NOAA Weather Forecast at area(s) of operation (Channel #3): _____

 Problems or issues: _____

 Please report all deficiencies, poor state of vessel, etc. BEFORE using vessel or you will be held responsible.

Emergency Phone: 911
 Emergency Radio: USCG Monitors VHF 16, Harbor Patrol VHF 9
 Divers Alert Network: 1-919-684-9111
 Mike Anghera: 805-698-1004

July 2017 Revision

Scientific Boating

Research boating includes similar precautions as SCUBA diving. Boating Safety Officers should oversee boat outings.

- Review “float” safety plans and conduct Risk Assessments.
- Follow pertinent standards.
- Provide training and confirm boaters have completed training.

Scientific Boating




Scientific Boating




Scientific Boating






JOHN. H. MARTIN

SAFETY GUIDELINES




P.F.D.s

Personal Floatation Device




WORK VESTS:
 Located on Port side in shelter deck
 Must be clipped: Cinch adjustable sides to fit
 Must be worn when:
 - Handling any equipment going overboard
 - Experiencing nausea
 - Climbing ladder to Fly-bridge




ABANDON-SHIP VESTS:
 Located under bench in Starboard side
 Must be clipped:
 Equipped with light and whistle
 Only to be worn when Captain instructs

LIFE-RING



Throw-rope in buoyant bag attached
 Located on both **Port** and **Starboard** sides of wheelhouse


1. NOTIFY CAPTIAN which side of vessel person fell from (**Port / Starboard**)
2. **DEPLOY LIFE-RING IMMEDIATELY** in direction of person in water
3. POST A LOOKOUT: KEEP THE PERSON OVERBOARD IN SIGHT




LIFE-RAFT

LOCATED ON FLYBRIDGE : 15 PERSON CAPACITY

1. FOR MANUAL RELEASE: relieve clip facing **Port side**
2. **TWO ADULTS** lift from cradle and deploy overboard



(Automatic Hydro-static release should vessel capsize)



EPIRB (Emergency Positioning Indicating Radio Beacon)
 Located aft of life raft, pull pin to release
 Notifies satellite of current position

VACUFLUSH TOILET

System cannot tolerate feminine products
 Please use trash receptacle located in Head

TO FLUSH: Hold down pedal at base of toilet for 3 seconds
TO ADD WATER: Lift pedal slightly for 3 Seconds

Agriculture

Agricultural Operations EHS

Agriculture research and teaching at four campuses involve risks and serious injuries have occurred.

- A CSU Agriculture Safety Webinar was delivered in Fall 2021.
- Alliant Insurance can assist with safety assessments.
- Sharing of safety training and collaboration is planned.
- Pomona has a embedded safety professional.

Agricultural Operations



Agricultural Equipment



Agricultural Equipment



Agricultural Equipment



Large Animals



Common Challenges

- Vacancies, turnover, and staffing
- Infrastructure challenges
- Diversity of operations, systems, vendors, environments, and cultures
- Lack of clarity between campus and auxiliary orgs for risk and EHS
- Increase in regulatory oversight and complexity
- Innovative approaches blurring lines and lack precedent

Keys to Meeting the Challenge

- Collaboration
- Accountability
- Decentralization in some cases and centralization in others
- Strategic thinking
- Succession planning and bench strength

Contact Info:

Scott Bourdon – CIH, CSP, ARM

Senior Manager, Risk & EHS

California State University, Systemwide Risk Management

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Thank You